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Fritz König, of Altona, a son of the noted Berlin surgeon.

DISCUSSION AND CORRESPONDENCE

NOMENCLATURE AT BRUSSELS

FROM the report of the chief features of the rules of nomenclature adopted at the Brussels Botanical Congress, which recently appeared in *SCIENCE*,¹ it appears to the writer that while some advance has been made, we are still far from a satisfactory solution of the problem.

One important feature of the rules adopted is the establishment of multiple dates or starting points for the nomenclature of different groups of plants. Eight different dates have been adopted and it is proposed to select still others later. It is difficult to see what good can be accomplished by the use of different dates as starting points for different groups. It has been urged that the adoption of an early date, as 1753, in the case of many groups of cryptogams, involves the recognition of numerous uncertain and obscure genera and species. This is a difficulty which can not be escaped. Whatever date may be selected there will still be many of these uncertainties and no manipulation or multiplication of dates will serve to avoid them. If the purpose is to avoid such inconveniences, why not adopt as recent a date as possible? It is doubtful, however, whether we shall ever be able to devise a plan which will relieve us of the necessity of deciding, in many cases, whether genera and species shall be discarded as unrecognizable or accepted on tradition or arbitrary authority. The adoption of multiple dates simply multiplies the difficulties of applying the rules.

The case of lichens and fungi furnish an excellent illustration of this. The rules, of course, do not recognize the growing belief on the part of many botanists that lichens are really fungi and should be treated as such taxonomically and nomenclatorially. It is well known to biologists that the boundaries

of all groups of living organisms are more or less uncertain and indefinite and authorities frequently differ as to whether a genus should be placed in one group or another. Certain genera are treated by some authors, even those who believe in the autonomy of the lichens, as simple fungi and by others as true lichens. Such cases are multiplied as each new starting point is adopted, which necessitates the drawing of new arbitrary lines of separation between groups of genera and species. It necessarily follows, therefore, that to reach uniform results in the application of the rules, there must be an arbitrary assignment of all the genera involved to particular groups before the date to be followed can be determined.

Then again, the evolutionary and historical aspects of the subject would seem to deserve some slight recognition and consideration. Plant names, like everything else, have a history and evolution which in many cases is closely associated with the growth of our knowledge of the biology of the organisms to which they are applied, and though we may not be justified, in this utilitarian age, in the opinion of some at least, in burdening science with the names of the discoverers or describers of genera and species and though we may deny that any ethical questions are involved in crediting or discrediting such persons, it is doubtful whether we are justified in ascribing to Fries or Persoon, or any other mycologist, the genera and species of previous authors which they have either confused, misconstrued or appropriated entirely. Such a procedure seems to be approved and endorsed by the form of citation adopted by the congress as illustrated by the example given: "*Boletus edulis* Fr., instead of *B. edulis* Bull.," or the clumsy form, "*B. edulis* Fries ex Bull." Why not write *B. edulis* Bruss. Cong., or omit entirely all citation of author or authority, and thus at least avoid misleading those who know nothing of the history of the organism and its name.

These matters are, however, of very slight importance compared with the fundamental question of types, a question which does not

¹ Farlow, W. G., and Atkinson, Geo. F., "The Botanical Congress at Brussels," *SCIENCE*, N. S., 32, pp. 104-107, July 22, 1910.

seem to have been considered by the congress. Without some method of fixing once for all the types of genera and species, we can see no possible hope of securing any great degree of uniformity or stability in the use of plant names, especially those applied to the fungi. As the writer has pointed out in another place,² generic names even when applied to monotypes have been and are at present transferred from the original species to another species or group of species without hesitation. There would seem to be little justification or excuse for such a procedure in the case of monotypic genera, but in many other cases where genera are composed of heterogeneous groups of species, as so frequently happens, owing to our lack of exact knowledge of the morphology and biology of the organisms, the segregation of such groups of species by different authors, very naturally leads to quite different results in the application of the original generic name or names. A generic name may be applied by one author to the largest group of the species which he regards as congeneric, by another, on account of personal preference or some other method of procedure, to some other species or group of species, so that without some provision or method of fixing once for all the generic name to some single species as its type, it would seem impossible to attain any great degree of stability or uniformity in the application of plant names.

If the purpose of the rules is to attempt to avoid change and to conform to "present usage," whatever that may mean, the only provision likely to accomplish it is that which provides for the adoption of a list of *nomina conservanda*. This provision nullifies all the rules and makes it possible to adopt any name which may be preferred by the congress. With such a list of names open for the addition of others it might at first be thought that it would be possible to satisfy all interested.

Without considering the possibility that per-

²Shear, C. L., "The Present Treatment of Monotypic Genera of Fungi," *Bull. Torr. Bot. Club*, 36: 147-151, 1909.

sonal preferences might influence the selection of the names to be included in such a list, there would still be great difficulty in deciding what names are entitled to adoption. Admitting, however, for the sake of argument, that these difficulties are imaginary and that we have a list of genera and species agreeable to all, there is still not likely to be much hope for uniformity in the use of the names, as different authors deriving their concepts of genera from different descriptions, interpretations or authorities, will still apply them differently. This may seem very improbable to those who are only familiar with the taxonomy of the flowering plants, which are so well known and understood, that it is not often that a heterogeneous group of species belonging to three or four or more different genera are found confused under one name, as is quite frequently the case among the fungi. This condition of affairs makes it practically impossible to secure uniformity in the use of *nomina conservanda* until some type method is adopted and each generic name firmly fixed to one species with which it must always be associated.

It would appear that the congress might have studied, with profit, the rules which have been formulated and published by the international zoologists who have advanced further in their solution of the problems of nomenclature than most of the botanists. The zoologists have recognized the fundamental importance of the type method and have adopted it.

The fact that the problems of nomenclature have assumed sufficient importance to be considered by international congresses should perhaps sustain our hope for further progress, especially when we recognize that such matters are subject to the general laws of evolution and education and that perfection can not be attained at a single bound, but must be approximated only and that by slow and tedious steps. There is no doubt, however, that we are slowly progressing in these matters and that we shall eventually evolve order out of the present chaos.

C. L. SHEAR